

PROCEEDINGS OF THE  
ENTOMOLOGICAL SOCIETY OF WASHINGTON

VOL. 42

OCTOBER 1940

No. 7

THE IDENTITY OF THE ANT CAMPONOTUS (MYRMENTOMA)  
CARYAE (FITCH).

By MARION R. SMITH,

Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

In 1854 Asa Fitch, then State Entomologist of New York, described all three castes of a new North American ant under the name *Formica caryae* (Trans. N. Y. State Agr. Soc. 14 : 855-859). His descriptions of the various castes are too brief to permit the species to be easily recognized, although his notes on the nesting sites and habits are of some assistance. Fitch cited no type locality but simply stated that he had encountered the ants under loose scales of hickory trees while searching for insects or while preparing these trees for fuel. In his general account he further remarked, "Hickory and walnut trees whilst growing are also a favorable resort for these insects and we have one American species which appears to be a constant resident upon them." It is unfortunate that he refers to *caryae* as living on walnut trees, and it is even more unfortunate that he went so far as to apply the common name, "the walnut ant," to this species, for his unpublished notes in regard to his cotypes record specifically that he found the ants in burrows in bitter walnut firewood and hickory, and also under the shaggy bark of hickory. Sudworth's "Check List of Forest Trees of the United States" (page 52, 1927) states that the name bitter walnut is applied to *Hicoria cordiformis* (Wangenheim). Undoubtedly, Fitch in using the term "walnut" referred to some form of hickory of the loose-bark type.

Seventeen cotypes of *Camponotus* (*Myrmentoma*) *caryae* (Fitch) are in the United States National Museum. These consist of 8 workers, 2 females, and 7 males, although some of the specimens are represented only by fragments. Each pin bears a square paper label with a single or a double red line and Fitch's handwritten number but no other data.

Through the kindness of Dr. R. D. Glasgow, State Entomologist of New York, and his assistant, Mr. K. F. Chamberlain, I was able to secure data pertaining to the original cotype series of *caryae* which was composed of 61 specimens, all from Salem, Washington County, N. Y. Twenty-seven, bearing

Fitch numbers 5039-5065 inclusive, were taken January 29, 1855, "in burrows in bitter walnut firewood" or "in the house in cavities in bitter walnut wood"; 29 specimens, with Fitch numbers 5249-5277 inclusive, April 2, 1855, "in burrows in bitter walnut firewood" or "in burrows in a hickory limb"; and 5 specimens, with Fitch numbers 8135-8139 inclusive, February 4, 1851, "under shaggy bark of hickory trees in orchard."

The ants of the subgenus *Myrmentoma* form small colonies of only a few hundred individuals in living or dead wood or in insect galls. The timid workers live largely on honeydew, which they lap from the surface of plants. Some of the forms are crepuscular. Others, such as *rasilis* Wheeler, *decipiens* Emery, and *nearcticus* Emery, have been recorded as infesting either beehives or houses, where they show a predilection for sweets.

*Camponotus (Myrmentoma) caryae* is of more than usual interest in that it is the first of 21 North American forms of the subgenus to have been described. A great deal of confusion has existed in the literature in regard to these. At various times they have been referred to *marginatus* (Latr.) or *fallax* (Nyl.) and more recently to *caryae* (Fitch). Emery, Buckley, and Wheeler, who described all the forms except one, overlooked Fitch's *caryae* until 1917, when Wheeler (*Psyche* 24 : 26-29), who had examined Fitch's cotypes in the United States National Museum, declared the ant described by Emery as *Camponotus marginatus* var. *nearcticus* (*Zool. Jahrb. Syst.* 7 : 675, 1893) to be synonymous with *caryae*. He also stated that all the North American forms closely allied to *caryae* should be removed from their previous assignments to *fallax* (Nyl.) and be associated with *caryae* as subspecies or varieties. His studies and suggestions have been commonly accepted. Recently I had an opportunity to compare cotypes of *caryae* with cotypes of *nearcticus* (loaned me through the kindness of Dr. Carlo Menozzi); and I found that, although these two forms are very similar structurally, they are not identical. The worker and female of *caryae* have numerous elongate, piligerous foveolae on their cheeks, clypeus, and mandibles; these parts consequently have an opaque, rough, bristly appearance. Such sculpturing and pilosity are not exhibited by the worker and female of *nearcticus*, although each of these has a few long, erect hairs on the clypeus.

The form which should have been synonymized with *caryae* is that described by Emery as *Camponotus marginatus discolor* var. *cnemidatus* (*Zool. Jahrb. Syst.* 7 : 678, 1893). I have been able to compare worker cotypes of *cnemidatus* (also loaned me by Dr. Menozzi) with worker cotypes of *caryae* and have not been able to find any difference of significance; I am therefore synonymizing *cnemidatus* under *caryae*. The cotypes of *cnemidatus* were collected at Washington, D. C., by Theodore

Pergande. No remarks were made as to the nesting sites and habits of this species.

I agree with Wheeler's association of all the eastern forms of *Camponotus* (*Myrmentoma*) with *caryae* but am inclined to think that some, at least, of the western forms are distinct.

The wide distribution of the ants of this subgenus, their abundance in certain regions, the economic importance of certain species, and their morphological variation have led me to attempt to revise the entire complex. It is hoped that this work can be completed in the near future.

#### *Camponotus* (*Myrmentoma*) *caryae* (Fitch).

*Formica caryae* Fitch, Trans. N. Y. State Agr. Soc. 14 : 855-859 (1854) 1855; *worker, female, male*; First and Second Report on Nox. Benef. and Other Ins. State N. Y., 151-155, 1856; Third Report, p. 123, 1859.

*Camponotus marginatus discolor* var. *cnemidatus* Emery, Zool. Jahrb. Syst. 7 : 678, 1893, *worker*. New synonymy.

*Camponotus fallax discolor* var. *cnemidatus* Emery, Wheeler, Jour. N. Y. Ent. Soc. 18 : 232, 1910.

*Camponotus* (*Camponotus*) *caryae* (Fitch), Wheeler, part, Psyche 24 : 27, 1917.

*Camponotus* (*Camponotus*) *caryae discolor* var. *cnemidatus* Emery, Wheeler, Psyche 24 : 28, 1917.

*Camponotus* (*Myrmentoma*) *caryae* (Fitch), Emery, Gen. Insect., Fasc. 183 : 117, 1925.

*Camponotus* (*Myrmentoma*) *caryae discolor* var. *cnemidatus* Emery, Gen. Insect., Fasc. 183 : 117, 1925.

*Worker media*. Length 6.07-6.09 mm. (figs. 1, 2).

Head distinctly narrower anteriorly than posteriorly; including mandibles, slightly longer than broad, with feebly convex or straight posterior border, rounded occipital angles, and moderately convex sides. Mandible small, 5-toothed. Clypeus feebly carinate except toward anterior border, where there is also a small, but distinct, median emargination. Frontal area triangular, broader than long, but poorly defined. Eye oblong, weakly convex, approximately twice its greatest diameter from base of mandible. Antennal scape extending approximately one-third its length beyond posterior border of head; all segments of funiculus clearly longer than broad, the last segment approximately the combined length of the two preceding segments. Thorax short, not robust; dorsum in profile forming a low arch; thorax from above widest near middle of pronotum, gradually narrowing toward the laterally compressed epinotum, where the thorax is narrowest of all. Petiole convex in front, flattened or very feebly convex behind, with rather sharp superior border; petiole from behind highly arched. Gaster with 5 visible dorsal segments.

Shagreening on gaster fine, that on the thorax less so, and that on the head coarsest of all. In addition to shagreening of head, the mandibles, clypeus, and cheeks bear rather numerous, foveolate, piligerous punctures, which give the head in this region an opaque, coarse, bristly appearance.

Pubescence grayish, extremely fine, not obscuring the ground surface, most distinct on gaster and appendages, especially the appendages, where it is longer, coarser, appressed. Pilosity sparse, present on lower and dorsal surfaces of head; a transverse row of hairs on epinotum where base and declivity meet, a row on upper border of petiole, and two rows on each gastric segment, one row slightly anterior to middle, the other at the posterior edge; short, erect hairs at tips of antennal scapes, femora, and tibiae, and several hairs each on mesonotum, coxae, trochanters and lower surfaces of femora and gaster.

Brownish black to black, with the mandibles, clypeus, anterior border of cheeks, and appendages lighter. Funiculi, tarsi, and articulations of legs paler than rest of appendages. Posterior border of each gastric segment pale.

Redescribed from 4 worker cotypes bearing the Fitch numbers 5052, 5059, 5272, and 5275.

*Worker minor.* Length 5.3-5.6 mm.

Smaller and more slender than the worker media. Also differing from it in the following respects: Head narrower in proportion to its length; clypeal emargination feeble; mandibles, clypeus, and cheeks with sparser and more finely foveolate, piligerous punctures, thus causing the anterior border of the head to appear more shiny and less bristly.

Redescribed from 2 worker cotypes bearing the Fitch numbers 5064 and 5277.

*Female.* Length (head and thorax only) 5.4 mm.

Excluding the usual morphological differences between castes, the female differs from the intermediate worker as follows: Sides of head less convex, and more convergent anteriorly; clypeus more convex, and lacking the median carina; pit on each side of clypeus deeper; frontal furrow more distinct. Wings pale but not clearly transparent, of the usual formicine type (that is, with a cubital and a radial but no discoidal cell); veins very light brown or yellowish. Pilosity and pubescence similar to those of worker except for more hairs on the mesonotum. Hairs present on scutellum.

Redescribed from 1 female cotype bearing the Fitch number 5266.

*Male.* Length 6.3-6.5 mm.

Posterior border of head broadly and rather evenly rounded, cheeks straight, subparallel. Eye oblong, convex, less than its greatest diameter from base of mandible. Frontal carinae divergent for approximately half their length, then subparallel throughout the posterior half. Frontal area poorly defined. Frontal furrow weak, extending at least through length of frontal carinae. Clypeus convex, feebly carinate or ecarinate, and without distinct median emargination at its anterior border. Antennal scape approximately as long as first 7 or 8 funicular segments. Mandible elongate, triangular, toothless except for 3 more or less sharp apical points. As viewed from above, mesonotum almost entirely obscuring pronotum; mesonotum widest at point of insertion of front wings, without notaulices (Mayrian furrows) but with parapsidal sutures. Wings similar to those of female. Petiole low, wedge shaped, with excised superior border. Gaster with 6 visible dorsal segments. Stipes longer than broad.

Head, thorax, petiole and gaster rather finely shagreened and shining. Clypeus and cheeks with sparse but coarse piligerous punctures. Mandible lacking the coarse striation and punctulation of worker and female.

Pubescence not materially different from that of worker. Pilosity similar,

except that the erect hairs on mesonotum are more numerous, and in addition, there are hairs on the scutellum.

Shining black; mandibles, funiculi, tarsi, and articulations of the appendages lighter. Gaster with pale posterior border to each segment.

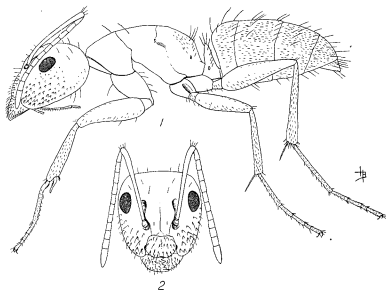
Redescribed from 5 co-types bearing Fitch numbers 5251, 5262, 5263, 5264, and 5965.

*Type locality*.—Salem, Washington County, New York.

*Host*.—*Hicoria cordiformis* (Wangenheim) and probably other species of *Hicoria*.

Fitch gives the following lengths for the various castes of this ant: Worker, 5 to 8 mm.; female, almost 12.5 mm. to tip of wings; and male (wings not included), 7.5 mm.

Although this ant resembles *nearcticus* in size, form, and color, it is clearly distinguished from that species by the nature of the pilosity and sculpturing on the anterior part of the head.



EXPLANATION OF TEXT FIGURES.

Fig. 1. Media worker of *Camponotus (Myrmentoma) caryae* (Fitch), lateral view; Fig. 2, head.

Drawn by H. B. Bradford.